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ABSTRACT

An evaluation was made of the training needs of the small and medium-sized enterprises (SMEs) in Portugal, Spain, Greece, and Italy and the potential of open, distance, flexible, and multimedia learning to meet those needs. The methodology included contacts with training providers, governmental institutions, and SMEs and circulation of questionnaires. Findings showed SMEs were geographically concentrated. More than 90 percent of enterprises were SMEs, and SMEs used conventional types of training courses almost exclusively. SMEs named three high priority needs: retraining of workers due to the introduction of new information and manufacturing technologies, training of managers, and training of young people for their first job within the enterprise. Most of those responsible for training in the SMEs were not aware of the existence of open, distance, flexible, and multimedia training. SMEs agreed that such training would be helpful due to the geographical dispersion of SMEs and lack of time and staff for training. They pointed out several problems related to use of these methods: lack of background education of the target groups, difficulties in using the new techniques, lack of user motivation, doubts about the potential of such training, and doubts regarding cost effectiveness. A search for examples of good practice of open, distance, flexible, or multimedia learning in SMEs found almost none. The SMEs were seen as an important potential market. (10 references) (YLB)

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THE POTENTIAL OF DISTANCE EDUCATION AND TRAINING FOR SMALL AND MEDIUM-SIZED ENTERPRISES IN THE MEDITERRANEAN COUNTRIES OF THE EUROPEAN COMMUNITY

by

Dr. Luisa QUINTINO

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
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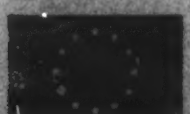

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A report for the Commission of the
European Communities :
Task Force Human Resources, Education
Training and Youth

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SUMMARY

The present study was aimed at evaluating the training needs of the small and medium size enterprises in the peripherical European countries (Portugal, Spain, Greece and Italy) and the potential of open, distance, flexible and multimedia learning to overcome these needs.

The results obtained through a significant number of contacts with SMEs, training providers and governmental institutions led to the conclusion that in these countries any training courses besides the conventional type (presential with written documentation) are almost not used in SMEs, which show very little awareness of the possibility of using other training means with good results.

A clear lack of strategic distance training planing for SMEs was

identified in all the countries, being nevertheless, in general, the SMEs quite clear about their main training needs.

Vocational training using flexible, distance or multimedia means is characterized by punctual initiatives, mainly from private bodies, directed to specific market needs, without coordination or global strategic planning at national level.

In the peripherical countries, the SMEs point as training areas with first priority the retraining of workers due to the introduction of new technologies mainly in the use of informatic means and advanced manufacturing technologies. Training of managers is also considered important, mainly in updating of management techniques also related with the introduction of new technologies, and training of young people for their first job within the enterprise.

There is a general agreement in the SMEs of the peripherical European countries that open, distance, flexible and multimedia learning would be very helpful mainly due to the:

- High geographical dispersion of the SMEs in all the countries

- The very small size of the majority of SMEs and the lack of time and difficulties in sparing personnel for undertaking training courses, specially if these take place far from the working site.

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The main problems that the use of DET may face pointed out by SMEs are related with the lack of background education of the target groups, the difficulties in using the new training technologies, the lack of motivation of the users, the cultural differences even within the same country, the doubts on cost effectiveness of DET and the recognition (qualification and certification) of professional skills obtained using DET.

Based on the results of the information collected, it is clear that there is a need for establishment of governmental (or other) supported vocational training programmes using open, distance, flexible or multimedia means in accordance with the priorities of SMEs at national level and its particular characteristics in each country. Also the development of new cost effective, user friendly products and the training of trainers for starting the implementation of new training technologies in the SMEs should be considered prioritary. Criteria for qualification and certification of personnel trained using DET need also to be established from the beginning.

A search for examples of good practise of open, distance, flexible or multimedia learning in SMEs in Portugal, Spain and Greece leads to the conclusion that very little is still being done in this field in these countries, since almost no successful cases were encountered, in industry. There are nevertheless a few examples in the service sector and of correspondence courses for industry. In Italy several examples were found.

The very low basic education of most of the target groups, the cultural differences, the high geographical dispersion and very small size of the companies can create problems towards the marketing and the implementation of DET but also indicate that the SMEs of the peripherical European countries represent, without doubt, an important potential market for open, distance, flexible and multimedia learning. The results of the study indicate that once correctly informed about its potential these SMEs are quite open to start using it.

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1 - INTRODUCTION

1.1 BACKGROUND

Studies undertaken in Europe point out that a strong effort must be done in upgrading the European workforce. Training and retraining actions for industrial workers are needed in general, but should vary according to the particular situation of the country or target group. All technology areas risk to be faced with skills shortage in various degrees in the coming years, thus education and training efforts should be undertaken in developing advanced technology programmes. The use of new technologies also creates the need to instill managers with innovation and technology management, so that they can implement the necessary organizational changes.

Social partners are generally in agreement with such directives but the way to implement it can vary significantly from country to country or from region to region.

Distance education and training can be a powerful tool in solving these needs if correctly directed towards industrial environments.

1.2 AIMS OF THE STUDY

The present study was aimed at evaluating the potential of open distance flexible and multimedia learning for the achievement of the training needs in the SMEs of the peripherical European countries.

To make this appreciation, the following aspects were covered:

- General assessment of the training needs and organization, in the SMEs of the different countries.
- Overview of the priority areas for training defined by the SMEs.
- General assessment of the awareness of the potential of open, distance, flexible and multimedia learning for professional development in the SMEs.
- Assessment of the impact and problems that open, distance, flexible and multimedia learning may encounter.

The results obtained allowed to suggest recommendations for the future development of DET in the peripherical European countries.

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METHODOLOGY:

The study was mainly based in Portugal covering also Spain, Greece. Efforts were also undertaken, towards the end of the study, to complete it with information on Italy. The methodology used was to:

- Identify patterns in the characteristics of the SMEs in Portugal, Spain and Greece with two main objectives:

  i) To obtain a general idea of geographical distribution, size, number of workers, sectors, and to link the results of the three countries.

  ii) To obtain information on the training activities in SMEs in these countries and also to link it, if possible.

With the aim of identifying the target groups in the peripherical European countries, the following was done:

- Evaluation of the training needs in SMEs in Portugal, Spain, Greece and Italy and of the acceptance level of open distance, flexible and multimedia learning. This was accomplished:

  i) through visits to Associations and SMEs of each of the seven sectors chosen to be covered

  ii) through the circulation of a questionnaire for Portugal

  iii) through visits to industrial associations and training providers for Spain, Greece and Italy

  iv) through circulation of questionnaires in Spain and Greece.

Another phase of the study aimed at searching examples of good practise from industrial sectors in the four countries. The study on Italy, due to the fact that it was lately added, has been done only through visits to training providers and industrial associations.

2-ANALYSIS OF DATA ON SMEs IN PORTUGAL, SPAIN AND GREECE

(Detailed information in Annex I)

The aim of this phase of the study was to compare the characteristics of the small and medium size companies in what refers to geographical distribution size, type, etc on SMEs in the peripherical European countries covered by this study.

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From the available documents and contacts established the following conclusions were drawn:

- The geographical distribution of SMEs is highly concentrated in given areas.

- In the three countries more than 90% of the total enterprises are SMEs, representing in Portugal and Spain the smaller ones, with less than 50 employees between 80% and 90% of these.

- The total employment given by SMEs was only possible to quantify in Portugal, where it represents more than 90% (see Annex I - Fig. 3). It is likely that in Spain and Greece a similar situation appears.

- An interesting pattern identified was the large concentration of employment in the Manufacturing and Commerce & Tourism sectors which are responsible for 66% of total employment in Portugal, 30% in Spain and 35% in Greece.

- Clearly due to its importance, **Manufacturing** is the sector with major need of training in the near future for all the three countries here considered. Commerce & Hotellary are in all the three countries very important areas of activity and represent the second more important sector in what concerns employment. It is also the sector with bigger percentage of SMEs and among these the majority are small companies with less than 5 employees.

2.1 - VOCATIONAL TRAINING

Several contacts with governmental bodies were undertaken in order to identify the vocational training aims and training providers in the four countries, directed towards SMEs.

In Portugal, the vocational training is coordinated by the Ministry of Labour through IEFP - Institute for Employment and Vocational Training. Nevertheless, there are other Ministries with responsibilities in this field.

At a national level, vocational training is given in two main different systems:

A. Schooling (vocational)

B. Extracurricular Learning

which are described in Annex II.

The future trends of vocational training indicate that five sectors, such as computers, chemical industry, energy, mechanical and electrical industry are those with higher development in Portugal.

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Nevertheless besides the aspects referred above it can be pointed out that the following three items have to be considered in the future needs of vocational training in Portugal:

- The quick increase and still existing need of development of the service sector.
- The need to increase the qualification of trainers and the need of new trainers.
- The need of better coordination of the sectorial politics of training in what concerns objectives, methodologies, trainees and human and technical resources needed.

2.2 SPAIN

In Spain vocational training has two major components that are coordinated by the Ministry of Sciences & Education: the so called vocational training under regulation and the vocational training of young people and adults coordinated by the Ministry of Labour. Also the Ministry of Agriculture coordinates some of the training in its field of activity.

For the future, the needs of training have to take into account some important factors like:

- The quick increase of the population looking for the first job.
- The needs of the service sector which is continuously increasing during the last 10 years.
- The existence of autonomous regions which will be responsible for regional training.
- The preparation of training products for the future needs of vocational training, particularly in the service sector.

2.3 GREECE

Vocational training in Greece is firstly coordinated by the Ministry of Education and secondly by the Ministry of Labour through the OEDA - Organism for the employment.

The priorities for vocational training of Adults are defined by the "General Secretariat for Training of Adults", dependent of the Ministry of Culture.

A major remark, is the fact that due to the big concentration of population and economical activity in a very small area of the country, vocational training clearly needs to reach areas outside this zone in order that economical activity could be promoted there.

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Training in Tourism professions and Health is coordinated by the Ministry of Presidency and by the Ministry of Health respectively, this creates some difficulties of coordination of the overall politics of training in the country.

In the future, some of the presently existing problems are expected to be overcome by correct implementation of the legislation specially in what refers to professional rights of those with diplomas given by the Technological Training Schools (TEI). It is also considered as important future needs the following:

- Qualification and Training of trainers
- To change the emphasis given by vocational training from technological professions to the service sector (ex: health professions)
- To tighten the selection of trainees as well as the evaluation criteria in the vocational training schools

3- TRAINING IN SMEs

With the aim of identifying the training activities, the training needs and the interest on distance education and training in the SMEs of the countries covered in this study, visits were undertaken to industrial associations, training providers, small and medium size companies and a questionnaire was circulated through SMEs in Portugal and through SMEs, and training providers in Spain and Greece.

The questionnaire mailed, designed to be very simple to answer, was divided in three parts, the first aimed at the characterization of the enterprise, the second at its current training activities and the third at its plans for the coming years. This last part included some questions for evaluating the awareness and interest in distance, flexible and multimedia learning.

3.1 TRAINING IN SMEs IN PORTUGAL

The mailing of around than 1100 questionnaires was done to enterprises of traditional industry sectors, and service companies, characterized by a large number of SMEs. These were:

- *Ornamental Stone and Ceramics*
- *Textile Industry*
- *Shoe Industry*
- *Wood and Furniture*
- *Car Repair*

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- *Tourism*

- *Transports*

The analysis of the answers obtained (15%) which were complemented with information obtained through face-to-face interviews to companies and industrial associations of each of the sector, allow to evaluate the portuguese situation.

3.1.1 CHARACTERISTICS OF THE SMEs

With the exception of the textile industry all the sectors are characterized by a large proportion (more than 70%) of companies with less than 100 workers.

The traditional industry sectors are geographically concentrated in given areas which differ from sector to sector.

The service companies of the sectors covered are dispersed all around the country.

3.1.2 EXISTING TRAINING ACTIVITIES

In all the sectors the large majority of the companies are aware of the need of training their personnel and identified the areas where this need is more required (see Fig.1).

Also the large majority has provided training to their workers in the last years, always of the "presencial" type.

Between 8% and 10% of the companies have training departments with the exception of the ornamental stone and shoe industries were none of the companies that answered the questionnaire or were visited have training departments.

3.1.3 POTENTIAL OF DISTANCE, FLEXIBLE AND MULTIMEDIA LEARNING

It became very clear that most of the responsibles for training in the SMEs are not aware of the existence of open distance, flexible and multimedia training courses. The answer to the questionnaires show also lack of interest in such type of training (see Fig.2).

During the interviews, it was possible to explain in what consist this type of training and the reactions were in all cases very positive. All the industrial associations and most of

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the companies have a clear idea on the type of courses that would be needed in a near future and where it could be used. The areas vary from sector to sector.

In the ornamental Stone and Ceramic sector, it is considered that in a first stage, courses for updating of managers and in a second stage, after an analysis of the specific needs, packages for training of workers in enterprises situated in regions far from the main cities are needed.

The training activities organized by the car repair sectorial association, directed to fulfil the needs of the companies, in the fields of "*management of SMEs*" and "*use of informatic means*" don't reach many companies due to its geographical dispersion. These courses should be the first priority for distance training in this sector.

Languages and use of computers were the topics where the companies of the Tourism Sector have its strongest needs and where, to their opinion, distance training packages would be more welcome.

Training in the Transports Sector is centralized by the sectorial associations which have quite well organized training departments. Their opinion is that DET would be very interesting for the sector and their advise is to start with a course for transportation technicians, leading to the certification of the professional skills. On a second stage, training of drivers and transport chiefs from enterprises situated in regions far from the main cities, would be an interested target group for distance training packages.

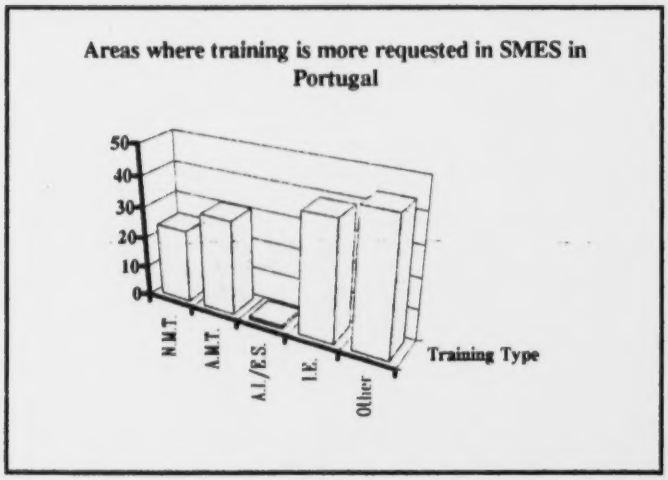

Fig. 1

The associations of Textile Industry and the training centers supported by IEFP (Vocational Training Institute) have a clear idea of the training needs of the sector. Vocational training in the different professions is well established and organized. The needs for new courses where distance training could be implemented are on the use of information technologies, new advanced production technologies for retraining of workers and management innovation for managers.

The situation of training activities and needs for the Shoe Industry is very similar to the textile sector.

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The first priority identified by the Wood and Furniture SMEs for distance training is for updating of managers/owners of the SMEs of the sector and afterwards, once a more deep analysis of the needs is made, with packages for training of workers, leading to qualification and certification of professional skills.

Also most of the sectors referred the need of programmes for young people starting their professional life, who have an integration period that could be reduced if the practical training was supported by training courses. These are nevertheless usually only done in classrooms with a teacher becoming thus very costly for most of the cases in SMEs. Distance learning would be very helpful in this area.

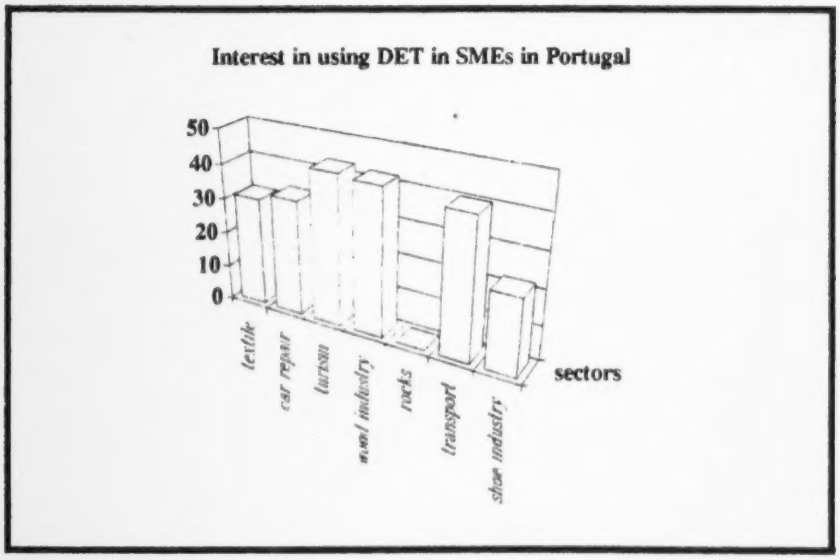

Fig 2

During the face-to-face interviews, several problems that could interfere with the use of distance training were identified and discussed. These vary from sector to sector but consisted mainly on the following:

- Very low basic education of the target groups. In some cases, the managers of the SMEs are senior workers that started their own business, having only the primary school as basic education, also, in the same sectors (eg. Ornamental Stone, Shoe and Textile) the workers are very low educated.

- Another problem presented by some companies was the lack of interest of the workers in any kind of training, namely of the older ones. For most of the companies, the use of distance training to provide courses in after working hours would be very helpful as one of the main problems, that the companies face, is the impossibility of sparing its productive workers, which in many cases work extra time.

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- Some companies, situated in agricultural regions named the lack of interest in training of their workers as an important problem. These are usually also small farmers and spend their free time working in agriculture thus not being particularly interested in after labour training.

- The sectors with high geographical dispersion showed some concern on the way to market efficiently distance training courses and advise a careful planning for the start-up of this activity.

- One of the sectors presented another problem related with the possibility of qualification and certification of the personnel trained using these new advanced schemes.

The view of training providers differs in some aspects from the view of the SMEs as these mention, as main problems, the need of qualified trainers which are not enough in Portugal, the high cost that distance training packages can have when developed to small specific target groups (eg. for a given industry sector only), the strong investment needed in spreading the potential of distance training in the SMEs which are usually not even aware of its existence.

3.2 TRAINING IN SMEs IN SPAIN

The questionnaire was mailed to 500 SMEs of the seven different sectors but a very low answering rate was reached (1,5%).

To obtain the necessary information interviews with industry training providers and with governmental institutions, industrial associations and institutions involved in COMETT and DELTA projects were undertaken.

The analysis of the opinions collected allowed to draw the following conclusions:

- Retraining of workers in the use of new manufacturing technologies and of informatic equipment is considered a strong need in Spain, in the industrial sectors covered by the study.

- Training at management level is also relevant nowadays in Spanish SMEs.

- The training actions, needed to meet the requirements identified, are mainly promoted by the National Institutes of the different sectors. Nevertheless, there is a general opinion that these don't reach the expectations.

The main problem referred is the lack of adequate training means that exist in these training centers and the lack of contact with the enterprises. An example given is the non coordinated rules of the different bodies, e.g. giving a certificate of Auxiliary Technician to 16 years old persons, that are not allowed to start working before 18. This leads to the absence of a correct strategic planning which is needed to fulfil the needs of the different industry sectors.

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The methods used in training are mainly the traditional ones: presential with documentation support. The use of computers and audio and video tapes is also done. There was no mention to the use of distance learning in the contacted SMEs.

The training providers contacted mentioned nevertheless general packages that already exist (eg. Tecnicas de Calidad, from the Instituto Madrileno de Tecnologia).

Training activities will be undertaken in the future in all the institutions contacted. The large majority is aiming at increasing these activities namely in what refers to the retraining of workers for reconversion in the use of new technologies. At the managerial level, the aim is to maintain the existing courses.

Distance, flexible and multimedia learning was considered desirable and useful by all the contacted institutions, mainly with the aim of reaching the geographical regions far away from the main cities and with the aim of training personnel in enterprises with a heavy workload, where it is difficult to free the employees during labour time.

Distance learning is in use in Spain for the continuous Training of Adults both for schooling training and vocational training but it seems that this is not widely divulgated as none of the companies contacted, in the sectors covered by the study, was aware of it.

3.3 TRAINING IN SMEs IN GREECE

The questionnaire was mailed to 80 SMEs and other institutions linked with training activities in Greece. 20% of the answers were received, also face-to-face interviews were done with training providers and contacts by telephone were undertaken with governmental bodies and other institutions participating in european multimedia training projects, within the COMETT and DELTA programmes.

The information obtained through the questionnaires and the personal contacts allowed to draw the following conclusions:

- Approximately 50% of the enterprises that answer the questionnaire have training departments providing training for managers and for retraining of workers in new advanced technologies. (The significant difference between this result and the one obtained in the other countries is due to the fact that for Greece, the mailing list used included a significant number of training organizations, while in Portugal and Spain it only included small and medium size companies).

- The areas identified as needing a strongest training effort where the retraining of workers in the use of new manufacturing technologies and data processing equipment. In what concerns the managerial level this was considered important but not particularly needing more efforts in the future.

- To meet the training needs, the enterprises provide training to their workers and managers, inside the company, mainly in the bigger ones having training department and in training centers for the smaller ones. The training centers organize regularly training actions which are pro-

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moted by the National Organizations of the several activity sectors. These training courses are mainly traditional ones; presential with documentation support, however some mentioned having started with the use of multimedia and computer assisted training.

- It was also unanimously considered that the use of distance, flexible and multimedia learning is very important and useful in Greece (54% of positive answers) due to the geographical characteristics of the country, with a significant number of small islands. Also the existing number of SMEs having less than 50 employees is quite important. These companies have commonly a heavy workload, finding thus difficult to spare workers for undertaking training courses mainly outside the enterprise.

- An aspect focussed by some of the inquired institutions was the suggestion that when using distance learning this should be, at least in the beginning, accompanied by an animator to assure a better interactivity with the trainees and also to hold their interest and motivation.

3.4 TRAINING IN SMEs IN ITALY

A different approach for identifying training needs and potential of distance, flexible and multimedia learning for SMEs, in Italy, was undertaken due to the fact that this country was added to be covered under the present study at a later stage.

Visits to training providers and industrial associations in the region of Bologna were done as well as face-to-face interviews with people responsible for training institutions.

These contacts allow to draw the following conclusions:

- In general terms, there is a large offer of training courses in Italy, either by private or public institutions. Problems of coordination of these training activities are nevertheless felt in Southern Italy.

- A recent study carried out by the province of Bologna, Emilia-Romagna Region pointed out that training had a relevant role for innovation in SMEs in this region. The areas of training biggest demand have been the management and the use of informatics for management. Nevertheless, small companies with less than 50 employees showed a reduced sensibility to organization as a way to face changes in the market, product or technology. Companies with less than 50 employees belonging to the metalworking and commerce sectors are among these with less sensibility to this problem.

- Most of the companies in Italy with special emphasis to SMEs have a so called "passive" attitude to training. They showed particular difficulty to define their needs in training and most of the training hours have been supplied by centers offering standard programmed training. Almost no evaluation of training results is done by SMEs.

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- Many companies including SMEs have used the so called "*labour-training contract*" where specially young people are contracted for production jobs through a scheme where the contract includes training and labour sequentially attached.

- In future although vocational training in every area is considered of great importance and an increasing need is expected, there are some priority areas that can be considered.

For Managers and Company Staff	*Training in production management* *Training in Quality* *Training new Management Tecnics*
For Workers	*Training in Production professions for those searching for the first job*

4. EXAMPLES OF "GOOD PRACTICE"

The aim of this section is to describe examples of use of distance, flexible and multimedia training in the SMEs from the peripherical European countries.

The search undertaken in Portugal, Spain and Greece, which included the institutions involved in European multimedia training projects, lead to the conclusion that such cases are almost non-existent, for the moment, with the exception of correspondence courses but allowed also to identify some interesting examples in the service sector and some efforts being undertaken towards the preparation of distance training courses to SMEs.

The service sector which started first using distance training packages in Portugal was the banking sector. In Greece such packages are now under development.

In Portugal and Spain it exists, for approximately 15 years now correspondence courses in Quality Technology which are promoted by the Industrial Quality Associations.

An interesting example of preparation of distance training packages for SMEs was encountered in Portugal where a Portuguese and a Belgium training centers cooperate for the development of courses in Quality Management, using an advanced new product.

In what concerns DET, distance education training, Italy seems to be ahead of the other countries analyzed in this study. Several examples of DET exist in Italy and several experiences in different sectors can be presented. Among these and although not being a relevant sector in this study, there is a open learning course for agriculture promoted by the Mediterranean programme. This course has 30 different modules and includes manuals, slides and videos. Besides these, there are several other examples being initiated or already available as for example:

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- Training material for transport auto.

- Open learning material for training of personnel belonging to the Banking Institute - S.Paolo di Torino

- Open learning in the administration area (promoted by the Professional Training Center of Modena)

- Open learning in ceramic industry maintenance (promoted by the Professional Training Center of Sassuolo)

These examples are remarkable due to the fact that there is not yet any governmental support for those demanding or assessing long distance training. Existing packages of DET were financed either by big companies as FIAT, OLIVETTI and Banks or by regional institutions as ECIPAR and by European programmes as COMETT etc.

There is nevertheless a remarkable fact to notice, because it is unique among the analyzed countries, that is the existence of an institution, SCIENTER, specially created to promote open learning in the region of Emilia-Romagna for vocational training as well as the production of training material. The activity of this institution primarily directed to its own region is being extended throughout all Italy.

There is already since 1988, a national programme to promote open learning in the country which is supported by several big companies and banks and by ECIPAR and ISVOA (training institutions).

From what was said above, interest in DET in Italy can be considered as just started. In future, a continuous growing interest and need is expected.

The following case studies were chosen:

- Instituto de Formação Bancária (Banking Training Center) In this sector, training has a special importance. It has different characteristics from those of industry.

  Training has three stages:

  1st Basic training

  Any person enrolled receives specific training. Usually two-years modular training given not continuously after working hours.

  2nd Improvement training

  It also lasts for two years and has the same characteristics above mentioned.

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3rd Intermediate training

Lasts for a year. If an individual wants to be promoted, this training is an essential requisite, however, its frequency is optional.

4th Higher training

This is the so-called Banking Management Course. It lasts for a year and is given through seminars.

The first two levels have a strong distance learning component. Multimedia packages are used.

In any of this training phases evaluation tests are carried out by subjects. All trainees are given a certificate according to their level.

The CAL (Computer Assisted Learning) is now beginning to gain a growing importance, although still in a low stage.

This kind of self-learning, is soon to be developed in the agencies all over the country.

We were told by the Bank Manager , that training courses will be given inside the company, but it's possible that some specific courses can be given outside the company and during work hours. Until now, they have been working with IBM, Digital, Datainveste.

We should emphasize that training on Banking is always supported by manuals in Portuguese.

Associação Portuguesa para a Qualidade and Associacion Española por la Calidad (Portuguese and Spanish Quality Associations). The Portuguese Association for Quality (A.P.Q.) is a private non-profit making association, of public interest, whose members are companies, (about 500) and individuals, (about 600), that aims at promoting and spreading Quality, through training, seminars, congresses and also technical support to both industrial and services enterprises.

At a certain stage, 15 years ago, APQ decided to follow the Spanish example and translated into Portuguese their correspondence course on Quality Technologies, due to the great interest and the need of training in Quality Technologies, shown by the associates and the need of training a large number of people in all regions in Portugal. Its existence was divulgated in Portugal through APQ's associates and also in the press. This initiative started 15 years ago and it was a real success.

The first edition of 1000 courses was quite quickly sold out. The course included several modules such as: *Statistical Elements, Inspection using Graphics, Control by Variables, Control by Atributes, Sampling Tables* and *Dimensional Methodology.*

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The student had one year to complete the course and make all the exercises. To get an approval's certificate, the student had to pass a final exam. About 250 students had a frequency certificate and about 10 made the final exam and were approved. During the time the student was doing the course, he had the support of a trainer that would help him if necessary, using the phone, mail or telex.

Due to APQ's internal organization problems, there was no second edition of this course for some years. But as those problems are overcome now and because the demand is increasing, a new edition of the course has been done (in the beginning of 1991). This updated edition includes new modules like: Quality Management, Quality Costs and Quality Improvement.

This correspondence course is directed to workers, inspectors and also technicians and craftsmen.

In Spain, this correspondence course had the same success as in Portugal and also there, a second edition is being prepared with the same new modules as described for the portuguese edition.

SCIENTER

SCIENTER is a small non-profit making enterprise, specialized in training aiming at promoting innovation in training and divulgation of open learning methodology in Italy and particularly in the Emilia-Romagna region, where it is situated. It was created in 1988 and since then has been involved in several community projects related with open and distance training, analysis of the labour market and training needs in Italy. It also started some open learning courses specially directed to industry.

As examples of these courses the following, developed with the support of the Chamber of Commerce of Industry and Agriculture of Modena, can be presented.

- **Administration**

This course involves aspects as "enterprise system", "general administration", "general accounting", "industrial accounting", "management control", "taxes aspects" and "application of a personal computer".

It has a total duration of 250 hours from which 50 are undertaken in a classroom with a trainer, 150 are undertaken at home in auto-training and 50 are in-job training.

This course is directed to employees with a low level basic education and in 1990, 20 people were trained.

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- **Production in the textile industry**

This course involves aspects related with organization and technical aspects that a technician in production in the textile industry needs to know. The course has a 240 hours duration being 60 in presential lectures, 115 in auto-training and 75 in job-training.

- **Maintenance in the ceramic industry**

It is a course also directed to workers focussing organizational, technical production, control and maintenance aspects. It has 250 hours, 50 in classroom, 150 in auto-learning and 80 in job-training.

Both the courses were prepared but not started in 1990, due to the small number of people that showed an interest.

Another course in "**Mechanics**" was developed in 1990 and launched for a first group of 15 people.

All these courses were supported by written documents.

SCIENTER has also been involved in open learning for other target groups. Two examples that can be mentioned are the following:

- **Agriculture sector**

A course directed to agricultural "entrepreneurs" was done in 1988/1989 and was undertaken by 150 people. It had around 200 hours duration all to be undertaken by the trainee (auto-learning) with the exception of a short introduction that was made in a lecture room.

- **Banking sector**

A course aimed at training of trainees in open learning was done in 1988 for a group of around 20 people. The banking institution involved started an open learning unit and is now developing internal packages using documentation and software.

5. CONCLUSION

The present study lead to the following conclusions:

1) In all the countries covered by the study, government was the promoter of distance education and training giving priority to the recognized education levels: primary, secondary and university. Thus in Portugal, the Universidade Aberta (Open University) was created in 1988, in

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Spain the UNED - Universidad National de Education a Distancia (Open University) started in 1987 and in Italy the CUD created in 1984. Only Greece is still lacking of such initiative.
For vocational training no similar initiative exists in any of the peripherical European Countries.

2) SMEs have a very significant weight in the economy of the countries covered by the study (exports, employment,etc.)

3) Vocational training using flexible, distance or multimedia means is characterized by punctual initiatives, mainly from private bodies, directed to specific market needs, without coordination or global strategic planning at national level. This can be due to the fact that the support from government for distance, vocational training is almost non-existent and as its cost is high, this leads to few initiatives.

4) In the countries covered by the study, it is striking the lack of offer of open, distance, flexible and multimedia training packages, which specifically directed to SMEs is practically non-existent with the exception of Italy.
The few examples of good practise identified are in the service sector or in "horizontal"areas, as Quality, using only correspondence courses.

5) In the peripherical countries, the SMEs point as training areas with first priority the retraining of workers due to the introduction of new technologies mainly in the use of informatic means and advanced manufacturing technologies.
Training of managers is also considered important, mainly in updating of management techniques also related with the introduction of new technologies, and training of young people for their first job within the enterprise.

6) Despite the general lack of links between the needs of SMEs and the offer of DET in all the countries, it must be pointed out that there are, in all the countries, institutions that are preparing multimedia based courses to SMEs mainly within european cooperation projects, such as COMETT and DELTA.

7) There is a general agreement in the SMEs of the peripherical european countries that open, distance, flexible and multimedia learning would be very helpful mainly due to the following aspects:

- High geographical dispersion of the SMEs in all the countries
- Very small size of the majority of SMEs
- Lack of time and difficulties in sparing personnel for undertaking training courses, specially if these take place far from the working site.

8) The main problems that the use of DET may face pointed out by SMEs are:

- Lack of background education of the target groups

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8) The main problems that the use of DET may face pointed out by SMEs are:

- Lack of background education of the target groups
- Difficulties in using the new training technologies
- Lack of motivation of the users
- Cultural differences even within the same country
- Difficulties in defining the specific needs of the SMEs by its training responsible
- Lack of knowledge and doubts of the potential of open, distance, flexible and multimedia learning.
- Doubts on cost effectiveness of DET
- Recognition (qualification and certification) of professional skills acquired using DET

9) The main problems pointed out by the training providers are:

- Lack of strategic planning for training actions in the SMEs of most of the sectors
- Difficulties in convincing managers on the usefulness of DET
- Difficulties in designing courses for the level and interests of the trainees which are strongly variable
- High cost of the packages directed to small target groups (eg. technicians of ornamental stone industry, languages for drivers, etc.)
- Need of specialized trainers, for accompanying the implementation and use of DET
- Need of high investment in marketing efforts of DET
- Difficulties of communication for establishing joint planning with the SMEs

6. RECOMMENDATIONS

Based on the results of the information collected the following recommendations may be pointed out:

1 Establishment of governmental (or other) supported vocational training programmes using open, distance, flexible or multimedia means in accordance with the priorities of SMEs at national level and its particular characteristics in each country.

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2 Increasing of the activity of private companies with experience in the field in a coordinated customer oriented way and with external support, if needed.

3 Development of new cost effective, user friendly products.

4 Training of trainers for starting the implementation of new training technologies in the SMEs.

5 Divulgation and promotion of the potential of DET, carefully planned, to reach SMEs training responsible.

6 In order to facilitate the implementation of DET in SME's in the peripherical european countries the following suggestions can be considered:

6.1 On a first stage creation of the means for informing SMEs of the potential of DET. This should be based on reliable private or governmental institutions with a strong industrial implementation.

6.2 After the achievement of the motivation of training responsibles in SMEs for the use of DET, start with a few training packages carefully planned, for specific target groups at national level.

6.3 The training actions should be carefully monitored in the beginning and adjusted if needed.

6.4 The training actions could start-up with modular courses using conventional means and advanced training means.

6.5 The training actions could be based in translations and/or adaptations of training packages used with success in other european countries.

7 The risk of investing in the preparation of training packages not correctly directed to the needs of SMEs should be avoided. Efforts are needed to clearly identify the type of packages and its contents.

8 Criteria should be established to evaluate the quality of the courses.

9 Criteria for qualification and certification of personnel trained using DET need to be established.

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